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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

NGUYEN, ALAN V

ART UNIT

PAPER NUMBER

2662

DATE MAILED: 08/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/727,046

Applicant(s)

FUJITA, NORIHITO

Examiner

Alan Nguyen

Art Unit

2662

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 May 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 6, 7, 15-19 and 23-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 6, 7, 15-19 and 23-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 8.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. The amendment filed on 17 May 2004 under 37 CFR 1.131 has been considered but is ineffective to overcome the reference

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 6, 7, 15-19, and 23-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hughes et al (US 6,512,744) in view of Gibson et al (US 6,680,943) hereinafter Hughes and Gibson.

Regarding **claims 15, 16, 19 and 25** Hughes discloses a node which consolidates communication connections (**figure 2 shows the connection merging of elements 24 and 40 to node 32**) having different destination nodes in a connection-oriented network (**Column 3 lines 16-30, and 52-57 disclose that router 28 provides access to the final destination of a packet with destination D1 received at edge router 10. Furthermore egress edge router 30 forwards the packets to router 28 for forwarding to its ultimate destination**), comprising:

Hughes discloses a processor which determines whether a communication connection is present both in a first route of an existing communication connection and

in a second route of a second communication connection (**element 24, path V2D1; element 40, path V5D1; column 8, lines 4-14 discloses that after router 30 receives a packet, it looks into the packet and determines how further to deal with the packet. Lines 10-12 discloses that router 30 has a means of determining that packets having a certain address prefix should be passed to a downstream router**);

Hughes discloses wherein the processor modifies a parameter of the communication connection to accommodate merging the second communication connection in the tunneling communication connection (**column 3, lines 58-61 discloses that the routers 30 and 32 adjust their parameters depending on the scenario. For example, routers 30 and 32 may allocate two different virtual-channel identifiers to a common-destination path instead of assigning a common identifier. Also column 11, lines 1-5, further discloses that the routers are able to decide on and reduce data rates they forward until the data-cell rates decrease to the capacities. Making that decision requires balancing the rate allocated to the virtual channel with those allocated to other virtual channels that use the same interface**); and

wherein the processor merges the existing communication connection and the second communication connection on the tunneling communication connection (**column 10, lines 56-60 discloses the merging router divides among the upstream routers the explicit rate. After the allocation, merging of the data occurs; Column 4, lines 53-55 discloses that the packet switch of the embodiment is implemented**

in label-switching networks. It is inherent that the packets that are forwarded into the merger node must be transmitted to its proper destination, meaning that the downstream node must branch out to other nodes in the network to reach the destination point).

Hughes fails to disclose that the communication connection is a tunneling communication connection.

Gibson, however, discloses the use of tunneling in a MPLS communications network **(column 11, lines 1-14, discloses when the communications network is first established, it sets up a network of tunnels in the physical layer. These tunnels are subsequently registered with the management layer. That is, information about the source, destination and capacity of each tunnel is made known to the management layer. Each management node makes a record of the tunnels that originate or terminate at the abstract node associated with that management node).**

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Hughes' apparatus that makes judgment of possibility to have a route from a node and also modifies a parameter of an existing communication connection to accommodate for the new connection to utilize tunneling paths in its operation, as taught by Gibson. The motivation is that tunneling simplifies forwarding operation by pre-provisioning label switch paths of high capacity, the administrative server constrains the number of possible routes between two endpoints for a proposed

communication session of a given capacity. This reduces the level of detail needed to make routing decisions as explained by Gibson on column 10, lines 61-65.

Regarding **claim 24** Hughes discloses a communication merge method in a connection-oriented network which consolidates an existing communication connection having a first route to a first destination node with a second communication connection having a second route to a second destination node, where the first and second destination nodes are different (**Column 3 lines 16-30, and 52-57 disclose that router 28 provides access to the final destination of a packet with destination D1 received at edge router 10. Furthermore egress edge router 30 forwards the packets to router 28 for forwarding to its ultimate destination, therefore giving 2 separate routes for packets with differing final destination addresses**), comprising;

Hughes discloses determining whether a communication connection is present from a third node to a fourth node, where the third and forth nodes are in both the first route and the second route (**elements 30 and 32 are the third and fourth nodes; column 8, lines 4-14 discloses that after router 30 receives a packet, it looks into the packet and determines how further to deal with the packet. Lines 10-12 discloses that router 30 has a means of determining that packets having a certain address prefix should be passed to a downstream router**);

Hughes discloses modifying a parameter of the communication connection ("**merge-adjustment step**", **column 11, line 36**) to accommodate a merger of the communication connections, if the tunneling communication connection is present

(column 3, lines 58-61 discloses that the routers 30 and 32 adjusts their parameters depending on the scenario. For example, routers 30 and 32 may allocate two different virtual-channel identifiers to a common-destination path instead of assigning a common identifier. Also column 11, lines 1-5, further discloses that the routers are able to decide on and reduce data rates they forward until the data-cell rates decrease to the capacities. Making that decision requires balancing the rate allocated to the virtual channel with those allocated to other virtual channels that use the same interface); and

Hughes discloses merging the communication connections on the communication connection **(column 10, lines 56-60 discloses the merging router divides among the upstream routers the explicit rate. After the allocation, merging of the data occurs).**

Hughes fails to disclose that the communication connection is a tunneling communication connection.

Gibson, however, discloses the use of tunneling in a MPLS communications network **(column 11, lines 1-14, discloses when the communications network is first established, it sets up a network of tunnels in the physical layer. These tunnels are subsequently registered with the management layer. That is, information about the source, destination and capacity of each tunnel is made known to the management layer. Each management node makes a record of the tunnels that originate or terminate at the abstract node associated with that management node).**

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Hughes' apparatus that makes judgment of possibility to have a route from a node and also modifies a parameter of an existing communication connection to accommodate for the new connection to utilize tunneling paths in its operation, as taught by Gibson. The motivation is that tunneling simplifies forwarding operation by pre-provisioning label switch paths of high capacity, the administrative server constrains the number of possible routes between two endpoints for a proposed communication session of a given capacity. This reduces the level of detail needed to make routing decisions as explained by Gibson on column 10, lines 61-65.

Regarding **claims 6 and 17** with the features of parent claims 24 and 15 addressed above, Hughes further discloses where the connection-oriented network is a multi-protocol label switching network (**column 7, lines 11-19 of Hughes discloses a network that utilizes label switching routers that further uses labels to forward packets. Since the network is an MPLS network that uses label switching routers to forward the labeled packets, it is inherent that the connection coupling the nodes are label switched paths**) the communication connections are label switched paths, and the node is a label switching router (**column 8, lines 15-20 discloses that the link-layer and network layer protocols are Ethernet and IP. This is indicative of an MPLS network with label switching routers since it forwards layer 3 packets using IP and its associated routing protocols operate link layer synonymous with layer 2).**

Regarding **claims 7 and 18** with the features of parent claims 24 and 15 addressed above, Hughes further discloses where the connection-oriented network is an asynchronous transfer mode network **(column 4, lines 52-54 of Hughes discloses the invention is part of an ATM-implemented network)**, said communication connections are virtual channels and said tunneling communication connection is a virtual path **(column 5, lines 27-37 discloses the switch routs cells through virtual channels and virtual paths)**, and said node is an asynchronous transfer mode switch **(column 12, lines 15-19 discloses the switches of the embodiment are ATM switches)**.

Regarding **claims 23 and 27** with the features of parent claims 19 and 26 addressed above, Hughes discloses where the second communication connection is a new communication connection **(the path leading from router 34 to router 32 in figure 4 is the second connection, where the path from ingress router 34 to egress router 28 is a new merge connection)**.

Regarding **claim 26** with the features of parent claim 24 addressed above, Hughes discloses creating a new tunneling communication connection from a fifth node to a sixth node, where the fifth and sixth nodes are on the first route and second route, if the tunneling communication connection is not present **(elements 24 and 40; column 8, lines 4-14 discloses that after router 30 receives a packet, it looks into the packet and determines how further to deal with the packet. Lines 10-12 discloses that**

router 30 has a means of determining that packets having a certain address prefix should be passed to a downstream router).

Response to Arguments

4. Applicant's answers (17 May 2004) regarding claims 1-20 have been fully considered but are not persuasive. Regarding independent **claims 15 and 24**, the Applicant argues that the Hughes reference (US 6,512,744) fails to disclose merging of virtual channels having different destination nodes. The Examiner respectfully disagrees. Referring to figures 2 and 4, Hughes discloses element 28 as router R. It is implied that packets arriving at router 28 are further forwarded to different destinations. Column 3 lines 16-30, and 52-57 disclose that router 28 provides access to the final destination of a packet with destination D1 received at edge router 10. Furthermore egress edge router 30 forwards the packets to router 28 for forwarding to its ultimate destination. It is concluded that the Hughes reference in combination with the Gibson reference in their entirety continues to read on claims 6, 7, 15-19, and 23-27 through obviousness. Therefore the claims are not allowed over the prior art.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alan Nguyen whose telephone number is 703-305-0369. The examiner can normally be reached on 9am-6pm ET, Mon-Fri.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on 703-305-4744. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9314.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

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For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AVN
August 2, 2004


JOHN PEZZLO
PRIMARY EXAMINER